Motions and State of the IEEE P802.3dj Task Force

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IEEE P802.3dj Task Force

Introduction

- **Preparation for May 2023 Interim and review of prior key motions highlighted "assumptions" versus what Task Force has actually approved**
  - **https://www.ieee802.org/3/dj/projdoc/KeyMotions_3dj_230316.pdf**
- **This presentation highlights these "discrepancies"**
  - **Potential for progress – approve motions of perceived assumptions?**

PCS (& DTE / PHY XS)

- **Motion #10 Jan 2023 - "FEC" is part of the PCS for 200G/400G/800G/1.6T -**
  - (https://www.ieee802.org/3/df/public/22_05/22_0517/gustlin_3df_01a_220517.pdf)
  - **Related Motions -**
    1. RS(544,514,10) adopted as FEC encoding for 200G/lane AUIs (C2M and C2C)
    2. Adopt patra_3dj_01b_2303 slides 6 to 8, 13, 14, and 20 to 23 as part of the FEC approach for
       - 800GBASE-DR4, 800GBASE-DR4-2, 800GBASE-FR4
       - 400GBASE-DR2, 400GBASE-DR2-2
       - 200GBASE-DR1, 200GBASE-FR1 with FEC lane rate, convolutional interleaver details, and 1.6T support to be determined later
    3. Move to adopt gustlin_3df_01b_230206, slides 6-12, as the baseline for the 1.6TbE PCS/FEC, with the noted details (PCS lane forming and AM construction) to be determined later
    4. Move to adopt opsasnick_3dj_01a_2303, slides 3, 5-9, 12-13, as a supplement to the previously adopted 1.6TbE PCS baseline from
- **Issues:**
  - Motion #10 Jan 2023 points to wrong presentation "gustlin_3df_01b_230206" – should be 3dj
  - Only PCS for 1.6 TbE has been approved by TF motion, other rates have had FEC choice, not the PCS, approved.
  - patra_3dj_01b_2303 slide #6 notes existing Clause 172 for 800 GbE, no PCS Clauses noted for 200 GbE or 400 GbE
  - 800 GbE PCS(s?) for 10km / 40 km single λ objectives pending Task Force decisions

Perceived Task Force Assumptions

- **200 GbE**
  - **PCS – Clause 119**
  - **DTE XS – 118.1.2 (note – only calls out 200GXS)**
  - **PHY XS - 118.1.2 (note – only calls out 200GXS)**
- **400 GbE**
  - **PCS – Clause 119**
  - **DTE XS - 118.1.2 (note – only calls out 400GXS)**
  - **PHY XS - – 118.1.2 (note – only calls out 400GXS)**
- **800 GbE**
  - **PCS – Clause 172**
  - **DTE XS– Clause 171.2**
  - **PHY XS – Clause 171.3**

Per IEEE Std 802.3™-2022:

118.1.2 200GXS/400GXS Sublayer

The 200GXS, if implemented, shall be identical in function to the 200GBASE-R PCS in Clause 119 with the addition of the functions defined in 118.2. A single device may be configured as either a 200GXS or the 200GBASE-R PCS and may be managed through different optional management registers.

The 400GXS, if implemented, shall be identical in function to the 400GBASE-R PCS in Clause 119 with the addition of the functions defined in 118.2. A single device may be configured as either a 400GXS or the 400GBASE-R PCS and may be managed through different optional management registers.

What about –CR?

- No baseline proposals to date
- PCS / FEC?
- Support of AUI?
  - Per 802.3ck –
    - 200GBASE-CR2 - supports 200GAUI-2-C2C
    - 400GBASE-CR4 supports 400GAUI-4-C2C
  - Per 802.3df –
    - 800GBASE-CR8 – supports 800GAUI-8-C2C
- Signaling?

Perceived Assumptions Regarding -CR

- Will support C2C AUIs
  - 200GBASE-CR1 - 200GAUI-1-C2C
  - 400GBASE-CR2 - 400GAUI-2-C2C
  - 800GBASE-CR4 - 800GAUI-4-C2C
  - 1.6TBASE-CR8 – 1.6TAUI-8-C2C
- By motion AUIs are supported by RS(544,514,10), based on 200 Gb/s PAM4 signaling
- PCS
  - Will use same PCSs for 200GBASE-CR1, 400GBASE-CR2, and 800GBASE-CR4 per Slide #4 of this presentation.
  - Will use gustlin_3df_01b_230206, slides 6-12, as the baseline for the 1.6TbE PCS/FEC
- Will use same PMAs for each data rate as per ran_3dj_01a_2303, slides 6-24
- CR signaling is PAM4
  - If KR objectives are adopted it is assumed that the same would apply to each KR Objective per data rate.

Proposed Motions

- **Move to adopt gustlin_3dj_01b_230206, slides 6-12, as the baseline for the 1.6TbE PCS/FEC**

- **Move to adopt the PCS, DTE XS, and PHY XS noted on slide #4 of dambrosia_3dj_01_2305 for all 200 Gb/s per lane signaling based PHYs for 200 GbE, 400 GbE, and 800 GbE**